

Trash to Treasure

How Waste Becomes a Navy Resource

The Navy is using deconstruction techniques that support the old adage—"One man's trash is another man's treasure." These techniques reduce costs and recycle assets from the Washington Navy Yard's (WNY) Officers Club.

Waste products from construction and demolition (C&D) comprise almost 30 percent of all wastes disposed of by the Navy. Many landfills are experiencing decreased capacity for C&D materials which means rising disposal costs for this type of waste.

The Naval Facilities Engineering Command (NAVFAC) Washington, DC reduced the amount of waste of a renovation project for the former Navy Catering and Conference Center (formerly the Officers Club) at the WNY by using deconstruction techniques. By allowing a salvage contractor to recover building materials prior to the arrival of hazardous material abatement workers, NAVFAC Washington leveraged the inherent value of the existing materials and reduced costs to the overall project effort.

Solid Waste Overview

Research by the University of Florida showed that 92 percent of all construction and demolition wastes in 1996 came from demolition or renovation activity, which generated a total of 125 million tons of waste. Between 1985 and 1996, the national average tipping fee for C&D waste disposal increased by over 400 percent. Between 1990 and 2002, the number of active landfills accepting C&D wastes fell from over 1,900 to 1,400.

Researchers compared the rate of increase in disposal costs to the rise in health care costs over the same period. The trends for the future are sobering. Even if it is assumed that rising costs will slow the rate of increase, it is highly unlikely that the costs associated with disposal will decrease. As more states move to

regulate (or ban) C&D waste, disposal costs will continue to increase. Wastes from densely populated areas on both coasts will move to landfills in rural areas as nearby landfills close. Landfill volume will become an increasingly scarce resource.



This 1940's era U.S. Navy silverware would have been trashed with the rest of the Catering and Conference Center, but it was salvaged by the contractor and now sells as collector pieces.

We Used to Know How to Do This

Prior to World War II, the Navy practiced extensive reuse of available materials, especially in the first half of the 19th century and in wartime.

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A local homeless shelter in Washington, DC will now use the kitchen equipment from this former Navy Officers Club.



Shipyards scrapped wooden sailing vessels by stripping them of all usable timbers to refit other vessels. The Navy routinely mounted older cannon on new carriages as older ones wore out. Until the end of the Civil War, the Navy routinely pressed captured enemy vessels into service under new colors. In World War II (WWII), three 14-inch main gun turrets from the sunken USS ARIZONA were salvaged for use as coastal defense guns on the shores of Oahu, HI in early 1942.

WWII marked the coming of age of mass-produced, abundant supply items for the US armed forces. After 1945, older materials were considered to be of little value. Despite the advent of the recycling concept and federal government mandates, systemic salvage of existing materials to recover their value remains a concept of the days gone by.

So Why Don't We Do This Now?

Conventional demolition methods have the advantages of being quick to plan, initiate, and execute. It remains relatively cheap (\$8.00 per square foot according to the U.S. Army Corps of Engineers). The effort to effectively plan and execute a deconstruction or salvage operation is extensive, and requires an upfront commitment of time and money in the hope that future savings can be realized. The effect of inertia on large organizations where demolition is ingrained as standard procedure should not be underestimated.

The Project

WNY Building 101 was built in 1900 as a factory building to manufacture small

caliber rapid-fire cannon. Later, it was converted into a storage facility for Navy drawings. In the 1940s, the Navy renovated it again as the WNY Officers Club, later renamed the WNY Catering and Conference Center. The building footprint covered some 40,000 square feet on three floors built of concrete with wood decks. In 2002, the Navy decided to convert the building into office space, which required the near-complete demolition of the building interior.

Building Highlights

Unlike most military buildings, WNY 101 had architectural features with significant salvage value. Highlights included the following:

- A 28-foot mahogany bar with paneling and doors,
- Elaborate light fixtures in the third floor ballroom, including several solid brass chandeliers and crystal sconces,
- Extensive kitchen equipment, and
- Silver-plated flatware from the 1940s carrying "USN" markings, manufactured by Reed & Barton.

All of these features make the building a more desirable project for contractors interested in the salvage and resale of these items. Because many of these items are simply unavailable to most people at anything less than astronomical prices, a ready market exists for reusable items and materials. In addition, modern replacements cannot match many of the workmanship and vintage materials.



This mahogany bar was removed by the contractor and sold for \$3,000 the same day. It would have been otherwise disposed of with the rest of the demolition debris.



The brass chandeliers from this ballroom were sold to the producers of the popular television show *West Wing* for \$700 each and will appear in a future episode.

Building Survey

In order to determine items with salvage potential, NAVFAC Washington conducted a survey of WNY 101. The Naval District Washington Morale, Welfare, and Recreation (MWR) funded the survey. The survey produced a list of all items with salvage potential. Without the information provided by the survey,

Lessons Learned from This Deconstruction Project

- Start the planning process for deconstruction early. Don't insert changes into the schedule after the start of the project. Ideally, the survey and deconstruction/salvage effort should be spelled out as part of the proposal that goes forward for Congressional approval.
- Include deconstruction as part of the RFP. This will make the contractor responsible for incorporating deconstruction into the project.
- Include key people as early as possible in the planning process. For this effort, these included the project leader, construction technicians, the Resident Officer In Charge of Construction office, and legal counsel.
- Include waste reduction as a technical evaluation factor and/or incentive.
- Include deconstruction as a phase in the critical path charts for the overall effort.

the contracting steps taken later would have been much more difficult to take.

Contracting Phase

With the completion of the survey, NAVFAC Washington moved to complete contracting for a deconstruction contractor. The contract process included a closed bid process with the

bidders offering money to the government for the salvage rights to WNY 101. The whole Request for Proposal (RFP) process was compressed due to the late addition of the deconstruction phase to the timeline of the project. During this period, Naval District Washington decided to expand the amount of effort inside the building by the deconstruction contractor to reduce the amount of follow-on effort during the renovation. This, in turn, reduced MWR's ability to recover its initial cost for the survey.

The RFP for deconstruction and other contract documents borrowed heavily from a U.S. Army Corps of Engineers contract (number PW TB-23-200-1). Due to the short time-frame, the contract documents were derived extensively from the Army Corps of Engineers contract with appropriate substitutions made for Navy organizations.

When the RFP "hit the street", the response was mixed. Several deconstruction contractors who had earlier expressed an interest in this project did not submit a bid due to other commitments. Other bidders clearly did not understand the requirements of the RFP and assumed that "this was just another conventional demolition effort." Even after site visits, some bidders failed to comprehend just what NAVFAC Washington had in mind.

By Navy standards, the contract awarding the salvage rights to the successful bidder was very small (\$500). For the contractor, this was one of the biggest jobs they had ever undertaken. The size, location, and compressed schedule for the work made this a real challenge for the selected contractor, Second Chance Inc. of Baltimore, MD.

Results

The deconstruction phase of this project was scheduled for a two-

week period. This reduced the scope of the deconstruction effort and forced the contractor to focus his efforts on the high value items that could be readily resold. Key architectural features removed were the mahogany bar, the light fixtures, kitchen equipment and silverware.

The contractor sold the bar to a customer the same day it was removed for \$3,000. Four of the solid brass chandeliers from the ballroom ended up in the hands of West Wing TV show producers for \$700 each. Some of the kitchen equipment went to a local homeless shelter. And the Reed & Barton silverware now sells as collector pieces from the contractor's warehouse.

The work done by the deconstruction contractor also saved effort by the follow-on hazardous material abatement crew to the tune of some 750 to 800 man hours. This resulted in an avoidance of \$45,000 in direct labor costs alone, not including overhead or administrative costs.

And this is how the Navy proves that one man's trash is truly another man's treasure. ♪

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